



<b>DECLARATION UNDER RULE 132</b>	<b>Application #</b>	10/552,460
	<b>Confirmation #</b>	2270
	<b>Filing Date</b>	10/07/2005
	<b>First Inventor</b>	SARDO Alberto
	<b>Art Unit</b>	1794
	<b>Examiner</b>	Gwartney, Elizabeth. A.
	<b>Docket #</b>	2005-1561A

Commissioner for Patents  
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Sir:

I, Alberto SARDO, residing at 17, Montée des Tours, 13160 Chateaurenard, France, declare and say as:

1. I am an Italian citizen.
2. I am President of the Board of Xeda International.
3. I am an inventor of the above-identified application, and I am aware that the claims of the present patent application have been rejected under 35 U.S.C. 103(a) as being unpatentable over Bompeix et al. (US 6,723,364) in view of Riggle et al. (US 5,811,372) and over Bompeix et al. (US 6,723,364) in view of Kleinkopf et al.
4. The above-identified application is directed to a process for reducing phytotoxicity caused by physical and/or chemical treatment applied to fruit or vegetable comprising :
  - treating said fruit or vegetable with said physical and/or chemical treatment;
  - applying a composition comprising lecithins and/or derivatives.
5. The Examiner has taken the position that said phytoprotective effect was predictable in view of the cited documents.
6. The phytoprotective effect of the process of the invention is apparent from the following experimental data summarized below.

**Example 1:** Reduction of phytotoxicity caused by the treatment of Granny Smith apples by eugenol and heat

Oranges of the Washington Navel variety were treated with various doses of eugenol only, at different temperatures. Another batch was treated with a composition prepared in the following manner: 27 g of a mixture of lecithin and/or derivatives contained in between approximately 40% and 75% of lecithins or derivatives, including approximately 50% of lysolecithins or derivatives (Emultop HL50), are dissolved in 55 g of vegetable oil (soya) at ambient temperature. 18 g of eugenol are then added at ambient temperature with constant agitation. 100g of reconstituted oil solution is thus obtained. This solution is completely clear. It contains 18% eugenol.

After 15 days at approximately 50°C, 36°C or 46.5°C, followed by 3 days at ambient temperature, the pieces of fruit affected by *Penicillium* mould were counted. The results are summarized in the following table.

	% of fruit having penicillium mould
Control (cold water)	8
Warm water (36°C)	8
Warm water (50°C)	3
Eugenol 9000ppm (solution at 30 g/l) 50°C	29
Eugenol 5000ppm (solution at 17 g/l) 36°C	13
Eugenol 5000ppm (solution at 17 g/l) 46.5°C	22
Eugenol 5000ppm (solution at 18 g/l) + lecithins 52°C	4

These results indicate that eugenol brings about microlesions (phytotoxicity) which provide an environment which promotes attack by *Penicillium*. This phytotoxicity of eugenol is practically eliminated when eugenol is used in combination with lecithins according to the process of the invention.

**Example 2:** Reduction of phytotoxicity caused by the treatment of Golden apples by heat (50°C)

100 apples of the Golden variety were treated with or without the lecithins at a concentration of 2000ppm at 50°C before storage, then stored in a cooled chamber for 7 months at 0.5°C.

The apples which were not treated by lecithins had a yellow coloration whilst this change in colour did not appear on the apples which were treated by lecithins.

**Example 3:** Reduction of phytotoxicity caused by the treatment of Valencia oranges by cold (3.5°C)

Valencia Late oranges are treated with or without the lecithins at a concentration of 2000 ppm and stored for 3 months at 3.5°C.

The oranges which were not treated by lecithins show occurrences of damage linked to the cold ("chilling injuries") which are not visible for the apples treated by lecithins.

**Example 4:** Reduction of phytotoxicity caused by the treatment of Golden apples by calcium chloride

200 Golden apples were treated by 10 000 ppm of calcium chloride in water at room temperature during 45 seconds.

Another batch of 200 Golden apples was treated in the same conditions (10 000 ppm calcium chloride aqueous solution) and with a composition comprising 15% lecithin, 2% clove oil, 77.6% water, 11% sunflower oil, 3% oleic acid, 2.4% arginine. This composition was applied at a 7% dose.

In the first batch, after 6 months of storage at 1°C, 37 apples out of 200 apples treated with calcium chloride were damaged by phytotoxicity stains.

For the second batch, 4 out of 200 Golden apples were damaged by phytotoxicity stains.

It therefore follows that the application of a composition comprising lecithins reduces the phytotoxicity caused by calcium chloride.

It is thus apparent that the process of the invention exhibits a phytoprotective effect against heat/cold and chemical agents that could not have been expected in view of the prior art.

7. This significantly activity was neither disclosed nor suggested in the cited documents.

The present claims thus involve an inventive step over the cited documents.

8. The undersigned declares further that all statements made herein of his knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 23<sup>rd</sup> day of April 2009



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Alberto SARDO